

HELMINTHS AND HELMINTH COMMUNITIES OF FISHES FROM LAKE ATANASOVSKO

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Abstract: In the course of a helminthological survey, 565 individuals of seven fish species (four native and three non-native) were studied in spring, summer and autumn of 2012 and 2013 from the Lake Atanasovsko Wetlands, Bulgaria. Of them, *Gasterosteus aculeatus* L. (134 individuals), *Pungitius platygaster* (Kessler) (1 individual) (Gasterosteidae); *Syngnathus abaster* Risso (13 individuals) (Syngnathidae) and *Knipowitschia caucasica* (Berg) (186 individuals) (Gobionellidae) were native and *Pseudorasbora parva* (Temminck & Schlegel) (13 individuals) (Cyprinidae), *Gambusia holbrooki* Girard (111 individuals) (Poeciliidae) and *Lepomis gibbosus* (L.) (107 individuals) (Centrarchidae) were non-native species. Totally, 16 helminth parasite species were recorded – 5 trematodes, 4 monogeneans, 1 cestode and 6 nematodes. In *G. aculeatus*, five helminth species were found: *Posthodiplostomum brevicaudatum* (von Nordmann, 1832) (met.) (Trematoda); *Gyrodactylus arcuatus* Bychowsky, 1933 (Monogenea), *Progrillotia* sp. (larvae) (Cestoda), *Hysterothylacium aduncum* (Rudolphi, 1802) (LIII) and *Contracaecum* sp. (LIII) (Nematoda). In *K. caucasica*, four helminth species were discovered: *Aphalloides coelomicola* Dollfus, Chabaud & Golvan, 1957 and *Paratimonia gobii* Prévot & Bartoli, 1967 (Trematoda), *Gyrodactylus bubyri* Osmanov, 1965 (Monogenea) and *Contracaecum* sp. (LIII) (Nematoda). Two helminth species, the trematode *Timoniella imbutiforme* (Molin, 1859) and the nematode *H. aduncum* (LIII), were identified from *S. abaster*. In *L. gibbosus*, six helminth species were recorded: the trematode *Posthodiplostomum centrarchi* Hoffman, 1958 (met.), the monogeneans *Onchocleidus similis* Mueller, 1936 and *O. dispar* Mueller, 1936 as well as the nematodes *Schulmanella petruschewskii* (Shulman, 1948), *Spiroxys contortus* (Rudolphi, 1819) (LIII) and *Contracaecum* sp. (LIII). In *P. platygaster*, *P. parva* and *G. holbrooki*, no helminth parasites were recorded. New geographical records for Bulgaria were *P. centrarchi*, *A. coelomicola*, *T. imbutiforme*, *P. gobii*, *G. arcuatus*, *G. bubyri* and *Progrillotia* sp. In addition, *P. centrarchi* and *G. bubyri* were new helminth parasites for the Palaearctic Region and the Black Sea basin, respectively. In addition, some taxonomical issues were resolved: the genus *Aphalloides* was proved to be a member of the family Cryptogonimidae; the monogenean *G. bubyri* was recognised as a senior synonym of *G. micropsi* Gläser, 1974 and the subspecies *Posthodiplostomum minimum centrarchi* Hoffman, 1958, originally described from North America, was elevated to the species level as *P. centrarchi* Hoffman, 1958. In addition, the structure of the helminth communities (component communities and infracommunities) in both *K. caucasica* and *L. gibbosus* were characterised. In *L. gibbosus*, the helminth component communities and infracommunities studied had lower species richness, diversity and abundance compared to those in the host's native range, which was consistent with the Enemy Release Hypothesis. Though *L. gibbosus* harboured three alien parasites (*P. centrarchi*, *O. similis* and *O. dispar*), there was no evidence for spillover infections in fishes in the Lake Atanasovsko Wetlands. However, its negative impact on native populations might be by parasite spillback (participation in life cycles of native parasites in fishes, reptiles and birds). In *K. caucasica*, helminth component communities and infracommunities studied had poorer species richness than those recorded in the same host species from other (brackish) localities in the Black Sea basin.